DOCUMENT RESUME

ED 064 943 EM 010 064

TITLE	Letter to a Schoolboy.
INSTITUTION	Federal Communications Commission, Washington, D.C.
SPONS AGENCY	Federal Communications Commission, Washington, D.C.f
REPORT NO	R-18-G
PUB DATE	71
NOTE	9p.; Information Bulletin
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Administrative Agencies; *Broadcast Industry; Federal Legislation
IDENTIFIERS	FCC; *Federal Communications Commission

ABSTRACT

The report summarizes the work of the Federal Communications Commission (FCC) in regulating the broadcast industry, common carriers and other users of the broadcast spectrum. The report is written in simple non-technical language suitable for grade school children who write the FCC asking for information about its activities. (MG)

FEDERAL COMMUNICATIONS COMMISSION
18-G 7/71

Letter to a Schoolboy

Federal communication
Commission Wash. D.C.

Dear Sir;
I am writing for a good reason to bring my grades up in school. Mr. My teacher gave me a F last week for not getting a report an got.
This week he gave me an assignment on F. C. C.. I looked in the encyclopedia and couldn't find anything about it. So that's the reason I am writing to you for help with it. I am supposed to bring in a 1000 word theme and there are only 4 more weeks of school and it seems they will never pass.

Sincerely Yours
Bill

P.S.
I am in the 9th grade

This letter is one of many received by the Federal Communications Commission from grade school children who want a brief account of the FCC. The answer is in the following pages.

Importance of Communication

Telecommunication (as the general subject is now known) has become part of our daily life. By cutting time and distance, it benefits us as individuals and as a Nation. Its continuing developments, in addition to providing many new ways to communicate and obtain information, also serve to open new opportunities for careers.

Federal Communications Commission

The Commission is the key Federal body dealing with communications. It was created by Congress (under the Communications Act of 1934) to unify wire cable and radio communication regulation then split among several Federal agencies.

The FCC, as it is called for short, is headed by seven Commissioners. They are appointed by the President and are approved by the Senate. The President names one of them to serve as Chairman. A Commissioner's regular term is seven years. Not more than four Commissioners can be members of the same political party.

The Commission's staff is organized into bureaus and offices to handle different kinds of its administrative and regulatory work. With few exceptions, FCC employees are under civil service.

What the FCC Does

In the main, it is custodian of the Nation's airwaves which are used for many communication purposes. This radio space belongs to the people, and Congress requires the Commission to see that it is used in the public interest. In consequence, the FCC supervises all radio operation except that of the Federal government.

The Commission not only allots radio "bands" (sections of radio space) to the different radio services, but also assigns specific "frequencies" (individual channels) on which stations operate.

Radio transmission is something like traffic on land highways. Radio calls identify stations just as license plates do automobiles. Each radio message must travel within its assigned path so as not to collide with radio traffic in other lanes.

But, unlike land vehicles, radio transmissions can't use underpasses or overpasses, nor can they obey traffic signals for other communication to pass. What is more, radio spans oceans and is used to contact men and objects in outer space.

So Government control is necessary for orderly and efficient use of the airwaves, and to protect radio communication from interference.

Radio space can be compared to a long ruler with inches or smaller fractions marking off, but in irregular fashion, the bands of frequencies used by the different communication services. Some radio transmissions need wider channels than others. Also, not all frequencies behave alike. Some are good for long-range communication; others go only short distances. Since many parts of the radio space are crowded, it is necessary for some services to share frequencies.

In addition to assigning frequencies, the FCC licenses all non-Federal radio stations and the operators of their transmitters; regulates long distance and overseas communication by telegraph and telephone; promotes safety through the use of radio; encourages new and wider uses of radio; and supervises the organization of wire and radio systems in the national defense program.

Broadcast

There are three kinds of program services. The oldest one is AM. "AM" stands for "amplitude modulation" and refers to the way the signal is sent over the air. The second form of radio broadcast service is the newer "FM", which is short for "frequency modulation." The third type is television. These different ways of broadcasting are too technical to explain here but you can read about them in library reference books.

Broadcast services in our country are largely commercial. In other words, the advertising that you see or hear over the air is paid for by business firms to promote the sale of their products. It is this income which makes most broadcast reception free to the public. Programs may be live -- that is, broadcast when they are actually taking place -- or on tape or film. Television and radio programs may be taped.

Programs may be broadcast from local stations or networks. Networks send the same program simultaneously to large numbers of local stations by means of cable or microwave. Other kinds of broadcast services include noncommercial FM and TV stations which are used for educational purposes. International broadcast stations beam programs overseas. And auxiliary stations connect broadcast studios and transmitters, or pick up outside programs.

Pay TV

Another form of broadcasting is subscription television or pay TV. This involves the transmission of television programs over the air to viewers who pay a fee for the service. It was established as a regular broadcast service on December 12, 1968. In addition to a broadcast license, a pay-TV station operator must have a special authorization to carry on pay-TV operations. A pay-TV station operates by sending a scrambled signal over the air. This signal can only be received by subscribers who have a special device attached to their sets for unscrambling the picture and sound. The Commission, when it authorized pay-TV broadcasts, set up rules to make sure that programs on free TV would not be taken over by pay TV.

The FCC is prohibited from censoring broadcast programs. Consequently, it can't put a particular program on or off the air. Further, the Commission has no say in charges for air time or station profits. It does not license disc jockeys or other station personnel (except the transmitter operator) or regulate their employment or salaries.

The Commission does review a station's over-all operation -- usually at renewal time -- to see if it is meeting its public interest obligations. It requires station licensees to seek out and serve the programing needs of their communities, and otherwise live up to the promises they made when they applied to use the public's airways. It also decides on station sales and has rules limiting the number of stations assigned to the same owner.

CATV

CATV stands for Cable Television or Community Antenna Television. This is a system by which persons in poor reception areas are enabled to receive television signals by means of cables, similar to telephone lines, which bring the programs into their homes. CATV first began in the late 1940's in areas far from television stations or where, because of mountains, a good signal could not be received. Today cable systems are also providing service in large cities where reception is poor because signals are frequently blocked by tall buildings. A cable system operates by receiving the signal on a large antenna. It then amplifies or strengthens this signal and sends it out by means of special line to subscribers who pay a monthly fee for the service. A cable system may provide as many as twenty different channels to subscribers. Under FCC rules large cable systems, in addition to carrying signals from other television stations, must also put their own programs on one of the channels.

Common Carriers

Telegraph and telephone companies which sell services to the public and business are called "common carriers." Their operations can be by wire, cable or radio -- alone or in combination. The FCC regulates only those companies whose services cross state lines or go to other countries. Common carrier services which are confined within a state are regulated by the utility commission of that particular state. However, because radio knows no state boundaries, all common carrier radio operation is under FCC control.

For those common carriers it regulates, the Commission reviews rates and services, requires uniform bookkeeping, and passes on applications to increase or decrease services, and to merge companies.

Common carrier regulation is important because it affects the rates your parents pay -- and you will some day yourself have to pay -- to make telephone calls and to send telegrams.

The United States has nearly half of the telephones in the world. Almost all of our telephones are dial operated, and more distant places are being brought within dialing range. A cross country network of microwave relay (radio) and cable is constantly being expanded. It is used to carry many kinds of private and business communication, including broadcast programs.

The domestic telegraph system, too, has modernized its operations and now has its own coast-to-coast microwave system.

International telephone and telegraph services are provided by cable and communications satellites. It is possible to make a telephone call from your home to telephones in most foreign countries and telegraph communication is possible with almost any place on the globe. Television programs are forwarded from the most distant points by means of satellites.

Other Radio Services

Besides its use by broadcast stations and common carriers, radio is employed for many other kinds of services. These are known as Safety and Special Radio Services. They help protect life and property and serve business and industry as well as individuals.

The oldest of these services is marine radio. It aids navigation and safeguards passengers and cargoes by providing quick communication ship-to-ship and ship-to-shore.

Air travel is also protected by radio on aircraft and on the ground. Radio devices guide planes, control air traffic, and direct take-offs and landings.

Public safety radio services speed communication by police and fire departments and other local government bodies, assist forestry conservation and highway maintenance, and provide special emergency services such as directing doctor and ambulance calls.

Industry employs radio in connection with the delivery of electricity, gas, water, oil and other products, and to aid manufacturing, construction and other business processes.

The land transportation services find radio useful in railroad operations, for directing the movement of passenger buses, taxicabs, highway trucks and for automobile emergency dispatching.

Amateurs (better known as "hams") are one of the oldest and most active radio groups. Besides providing an engaging hobby, this service offers basic technical training and experience in radio operation.

The fastest growing service is called "citizens" radio. It numbers many individuals and firms who use very short range radio for communicating, signaling and controlling various devices.

National Defense

Tie-in of non-Government communication facilities with the national defense program is constantly being strengthened by the Commission. A special broadcast system is ready to alert and advise the public in event of attack. Meanwhile, these radio and wire facilities are put to peace-time tasks, such as warning about floods, hurricanes and other weather threats.

In these matters the FCC cooperates with the military and civil defense authorities. It, in turn, is assisted by its own regional, state and local industry advisory committees.

International

Agreement between nations is necessary for orderly and efficient international radio and cable communication. This assures uniform operation throughout the globe. Radio stations on ships and aircraft, for example, are enabled to operate on the channels assigned their respective services no matter where vessels and planes may be traveling.

Initial letters for call signals are apportioned among the different countries so as to identify the nationality of a station. There is also world agreement on operating practices and cooperative arrangements to curb interference. Satellite communication requires joint participation by the using countries.

The FCC works with the Department of State in representing the United States at international meetings on world communication matters.

Field Engineering and Monitoring

About one fourth of the FCC personnel is engaged in field engineering and monitoring work. These field engineers, in effect, are the Commission's "eyes and ears" in detecting radio violations and enforcing technical rules and regulations.

At monitoring stations, they patrol the radio highways continuously and furnish radio bearings on ships and planes in distress. Field engineers also investigate and remedy interference to radio communication, inspect all types of radio stations for engineering compliance, and give radio operator examinations.

Interference

To prevent interference before it can start, the Commission must approve certain equipment before it is manufactured and sold. This is done by testing at the Commission's laboratory at Laurel, Maryland, or at manufacturing plants.

Local and regional committees assist the FCC by cooperatively resolving routine interference cases in their areas. This gives the Commission more time to attend to serious interference problems which sometimes affect radio safeguards to life and property and disrupt international communication.

Research

Under its obligation to study and encourage new uses of radio, the Commission has established experimental and development services in which industry can test equipment and methods for improving radio communication.

Technical work by the Commission ranges from study of the effect of sun spots on radio signals to establishing standards for transmitting equipment and writing technical rules for operation in the various radio services.

Further Information

For those who may wish to know more about the Commission and its activities, additional information is contained in the FCC series of information bulletins and fact sheets about different subjects. These may be obtained from the FCC's Office of Information, Washington, D.C. 20554.

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